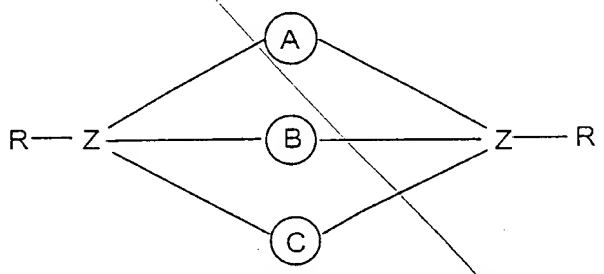
9. (Amended) The process as claimed in claim 1, characterized in that the rare-earth metal cryptate is bonded covalently to the oligonucleotide either directly or via a spacer arm.

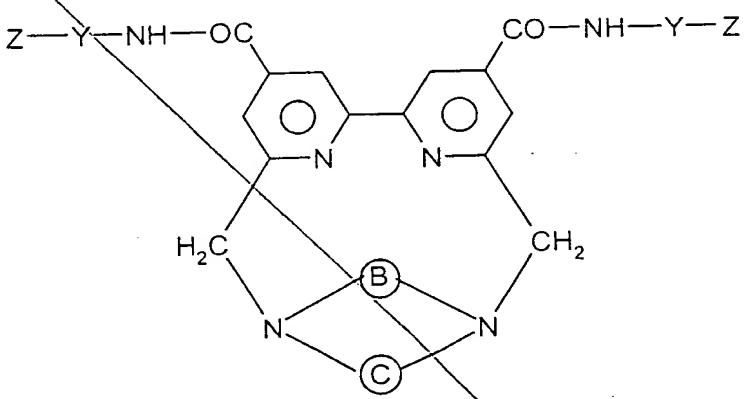
10. (Amended) The process as claimed in claim 1, characterized in that said rare-earth metal cryptate consists of at least one rare-earth metal salt complexed with a macropolycyclic compound of formula



I

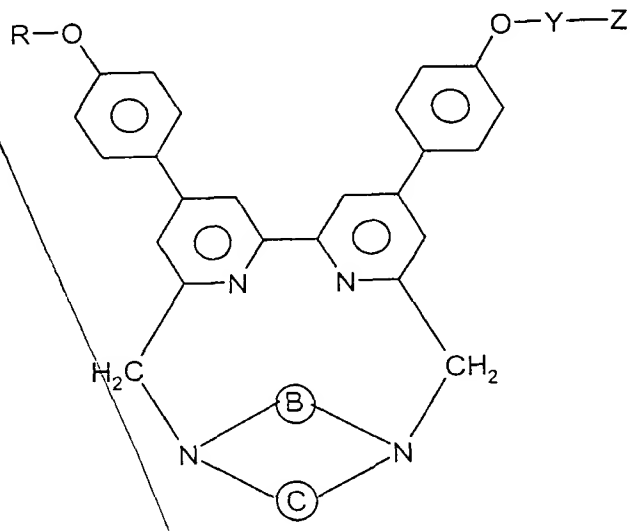
in which Z is an atom with 3 or 4 valencies, R is nothing or represents hydrogen, a hydroxy group, an amino group or a hydrocarbon-based radical, the divalent radicals (A), (B) and (C) are, independently of each other, hydrocarbon-based chains which optionally contain one or more hetero atoms and are optionally interrupted with a hetero macrocycle, at least one of the radicals (A), (B) and (C), also comprising at least one molecular unit or consisting essentially of a molecular unit, said molecular unit having a triplet energy which is greater than that of the emission level of the complexed rare-earth metal ion.

12. (Amended) The process according to claim 1, characterized in that the rare-earth metal cryptate consists of at least one rare-earth metal salt complexed with a macropolycyclic compound corresponding to one of the formulae II or III below:



II

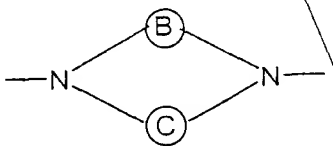
LOM 24



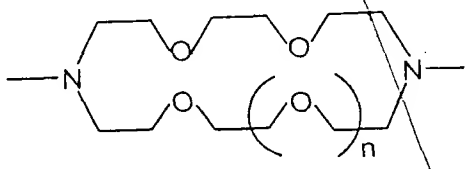
III

in which:

- the ring of formula



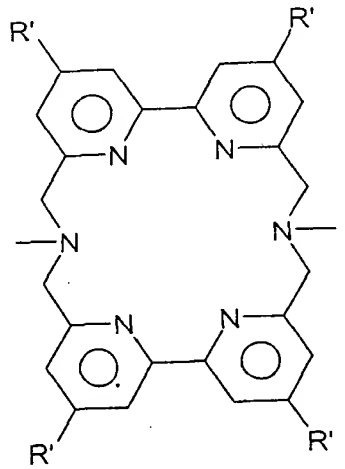
is one of the following rings:

1) 

n = 0 or 1

$[N_2O_4]$ macrocycle or cycle (22)

$[N_2O_3]$ macrocycle or cycle (21)

2) 

bisbipyridine macrocycle

a3 Cont.

-Y is a spacer group or spacer arm which consists of a divalent organic radical, chosen from linear or branched C_1 or C_{20} alkylene groups optionally containing one or more double bonds and/or optionally containing one or more hetero atoms such as oxygen, nitrogen, sulfur or phosphorus or one or more carbamoyl or carboxamido group(s) ; chosen from C_5 to C_8 cycloalkylene groups or chosen form C_6 to C_{14} arylene groups, said alkylene, cycloalkylene or arylene groups being optionally substituted with alkyl, aryl or sulfonate groups;

-Z is a functional group capable of bonding covalently to a biological substance;

-R is a methyl group or represents the group -Y-Z;

-R' is hydrogen or a group -COOR" in which R" is a C_1 to C_{10} alkyl group and preferably represents a methyl, ethyl or tert-butyl group, or alternatively R' is a group -CO-NH-Y-Z.

13. (Amended) The process as claimed in claim 1, characterized in that the rare-earth metal cryptate is bonded to the oligonucleotide via a spacer arm consisting of a divalent organic radical chosen from C_1-C_{20} linear or branched alkylene groups optionally containing one or more double bonds or triple bonds and/or optionally containing or more hetero atoms, such as oxygen, nitrogen, sulfur, phosphorus or one or more cabamoyl or carboxamino group(s); C_5-C_8 cycloalkylene groups and C_6-C_{14} arylene groups, said alkylene, cycloalkylene or arylene groups being optionally substituted with alkyl, aryl or sulfonate groups.

15. (Amended) The method as claimed in claim 1, characterized in that the rare-earth metal cryptate is a europium cryptate.

17. (Amended) The process as claimed in claim 1, characterized in that the fluorescent conjugate is used as the only label or as one of the fluorescent labels in the assay.

18. (Amended) The process as claimed in claim 1, characterized in that the fluorescent conjugate is bonded covalently to one of the members of a pair of molecules capable of binding specifically to one another, in particular a cellular receptor, an antigen, an antibody or a nucleic acid.

19. (Amended) The process as claimed in claim 1, characterized in that, in addition to said fluorescent conjugate, a fluorescent label comprising an acceptor fluorescent compound in the assay.